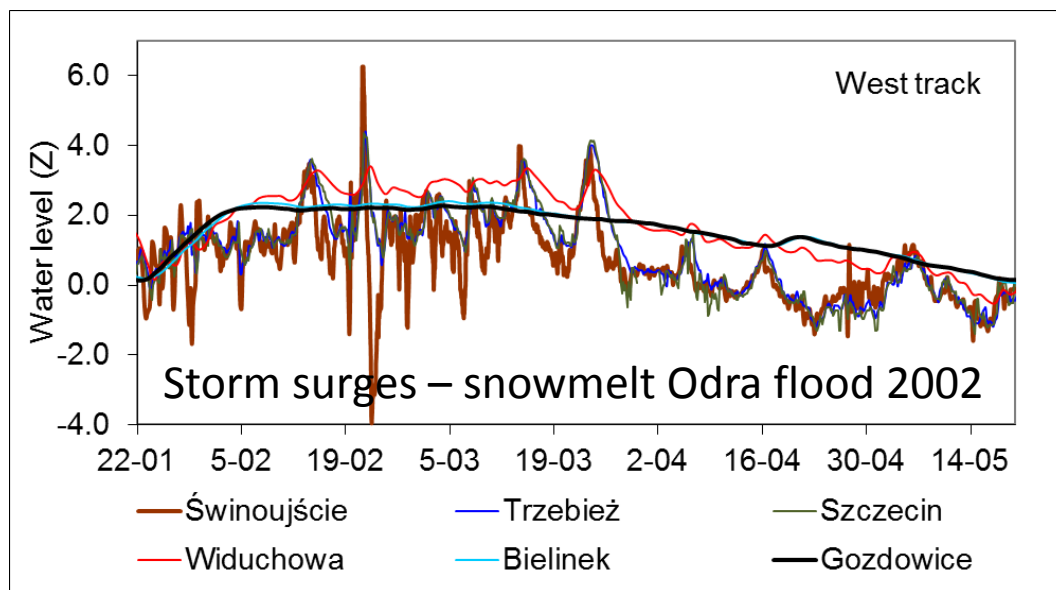
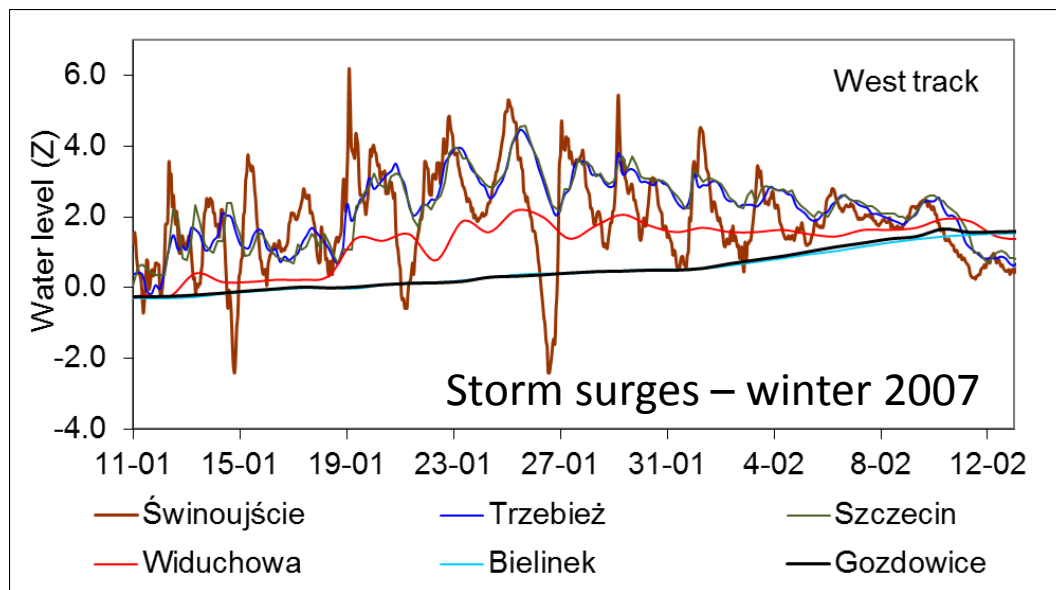
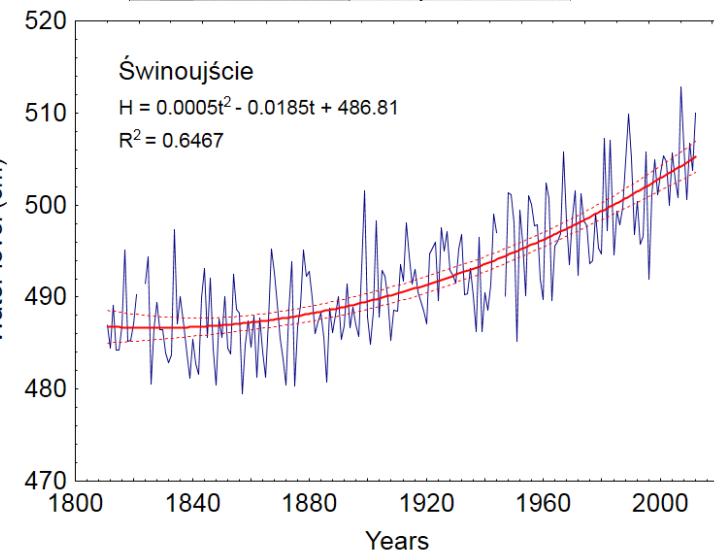
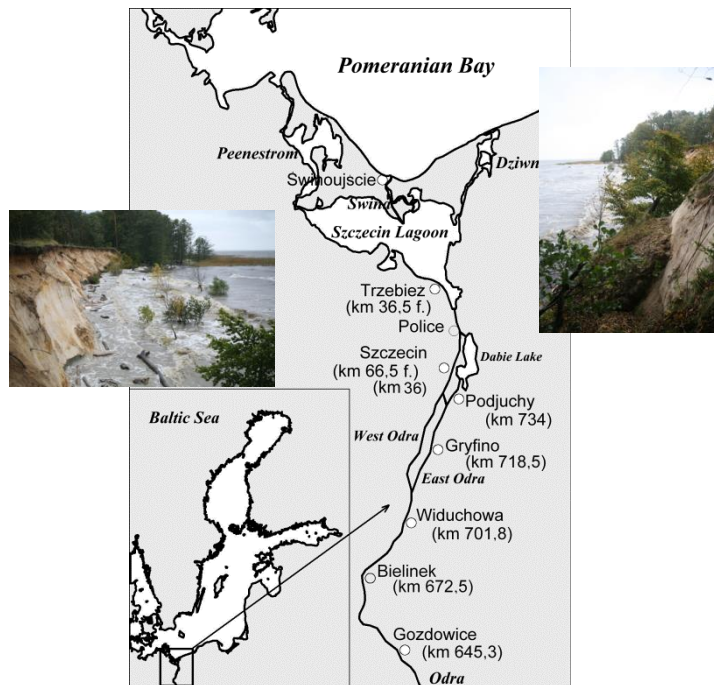


# Halina Kowalewska-Kalkowska, Severe water events in the Odra River mouth area in the light of recent sea level rise



The case study revealed that an extreme high water events occurred when a few surges, one by one, took place at the Pomeranian Bay coasts. Such cases resulted in a persisting many days' storm surge in the lower Odra channels and in the Szczecin Lagoon (e.g. winter 2007, autumn 2009). Such events were usually registered under the condition of the increased water volume in the Baltic Sea.

Extreme high water events were also observed when storm surges limited the outflow of the Odra River during snowmelt or rainfall events (e.g. springs 2002, 2010).

The recent sea level rise (0.17 cm per year in the period of 1953-2012) may, to a certain degree, influence the storm surge regime. In particular, the sea level rise may lead to an increase in: the basic sea level a storm surge is launched from, the frequency of storm surges, and the maximum sea level. In addition, the duration of surges may be extended. As a consequence, the low-lying coastal areas around the Szczecin Lagoon and those adjacent to the downstream Odra channels may be threatened by flooding.

It should be stressed that, despite the ongoing sea level rise at the Pomeranian Bay coast, the highest level ever recorded in Świnoujście and Trzebież was 696 cm (196 cm above msl) on 10 February 1874 and 637 cm (137 cm above msl) on 31 December 1913, respectively.